

WHAT IS CLAIMED:

1. A diabody-type bispecific antibody, having a first specificity to a human epidermal growth factor (EGF) receptor and a second specificity to a surface antigen expressed by a cell having phagocytosis or cytotoxic activity.
2. The diabody-type bispecific antibody according to Claim 1, wherein the human EGF receptor is a human EGF receptor 1 (HER1).
3. The diabody-type bispecific antibody according to Claim 1, wherein the cell having phagocytosis or cytotoxic activity is a cytotoxic T cell.
4. The diabody-type bispecific antibody according to Claim 1, wherein the surface antigen expressed by the cytotoxic T cell is CD3.
5. The diabody-type bispecific antibody according to Claim 1, wherein the first specificity is derived from variable regions in the heavy chain and the light chain of an anti-human EGF receptor antibody 528.
6. The diabody-type bispecific antibody according to Claim 1, wherein the second specificity is derived from variable regions in the heavy chain and the light chain of anti-CD3 antibody OKT3.
7. The diabody-type bispecific antibody according to any one of the above claims, which is a humanized antibody.
8. The diabody-type bispecific antibody according to Claim 7, wherein a complementary determining regions (CDRs) in the variable regions are derived from a mouse antibody, and the other parts are derived from a human antibody.
9. The diabody-type bispecific antibody according to Claim 8, having at least one CDR selected from the amino acid sequences of CDR1, CDR2 and CDR3 in the variable regions derived from a humanized anti-CD3 antibody OKT3 represented in Fig.21 and having at least one CDR selected from the amino acid sequences of CDR1, CDR2 and CDR3 in the variable regions derived from a humanized anti-human EGF receptor antibody 528 represented in Fig.22.
10. The diabody-type bispecific antibody according to Claim 9, having the amino acid sequences of CDR1, CDR2 and CDR3 in the variable regions derived from a humanized anti-CD3 antibody OKT3 represented in Fig.21 and having the amino acid sequences of CDR1, CDR2 and CDR3 in the variable regions derived from a humanized anti-human EGF receptor antibody 528 represented in Fig.22.
11. The diabody-type bispecific antibody according to Claim 10, wherein the

variable regions in the heavy chain and light chain derived from the humanized anti-CD3 antibody OKT3 have an amino acid sequence represented in Fig.21, and, the variable regions in the heavy chain and light chain derived from the humanized anti-human EGF receptor antibody 528 have an amino acid sequence represented in Fig.22.

12. The diabody-type bispecific antibody according to any one of claims 8 – 11, having a site-specific mutation in a framework that can affect the CDR structure.
13. Either of the two kinds of a single-chain polypeptide constituting the diabody-type bispecific antibody according to Claim 1, or a polypeptide constituting each region contained in the single-chain polypeptide.
14. A nucleic acid encoding the single chain polypeptide or each region contained therein of Claim 13.
15. The nucleic acid according to Claim 14 having an optimum codon for a host cell in which the nucleic acid is expressed.
16. The nucleic acid according to Claim 15 having the optimum codon for E. coli.
17. A replicable cloning vector or expression vector comprising the nucleic acid according to Claim 14, 15 or 16.
18. The vector according to Claim 17, which is a plasmid vector.
19. A host cell transformed with the vector according to Claim 17.
20. The host cell according to Claim 19, which is E. coli.
21. A method for the production of the a single-chain polypeptide according to Claim 13, comprising culturing the host cell according to Claim 19 to express the nucleic acid in it, collecting and purifying the single-chain polypeptide according to Claim 13.
22. A method for the production of the diabody-type bispecific antibody according to Claim 1, comprising assembling the single-chain polypeptides produced by the method of Claim 21 to form the diabody-type bispecific antibody according to Claim 1, and separating and collecting the diabody-type antibody.
23. A pharmaceutical preparation comprising an active ingredient selected from the group consisting of the diabody-type bispecific antibody according to Claim 1, the polypeptide according to Claim 13, the nucleic acid according to Claim 14, the vector according to Claim 17, and the host cell according to Claim 19.

24. The pharmaceutical preparation according to Claim 23 for use in eliminating, hurting, damaging and/or reducing tumor cells.
25. The pharmaceutical preparation according to Claim 23 for use in increasing the production of cytokines by the cells having phagocytosis or cytotoxic activity.
26. The pharmaceutical preparation according to Claim 23, 24 or 25 comprising as the active ingredient the humanized diabody-type bispecific antibody.
27. A method for increasing the production of cytokines by the cells having phagocytosis or cytotoxic activity, comprising adding the diabody-type bispecific antibody according to Claim 1 to a culture system containing the cells having phagocytosis or cytotoxic activity and tumor cells expressing the human EGF receptors.